

**Meeting of the Central Valley Flood Protection Board  
July 23, 2010**

**Staff Report**

**Wildlands Inc.  
Fremont Landing Conservation Bank - Fisheries Enhancement Project  
Permit No. 18603**

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**1.0 - BOARD ACTION**

Consider Permit Application No. 18603 to provide fisheries enhancement on 100 acres of floodplain habitat along the lower Sacramento River at the Fremont Landing Conservation Bank. The project is downstream of the confluence of the Feather River and the Sacramento River along the right (west) bank of the Sacramento River in Yolo County.

**2.0 - APPLICANT**

Riparian Ranch LLC (Limited Liability Corporation) aka (Wildlands, Inc.)  
3855 Artherton Road, Rocklin, CA. 95765

**3.0 - LOCATION**

The proposed project is located in Yolo County along the right (west) bank of the Sacramento River immediately downstream from the Feather River convergence of the Sacramento River and upstream of the Natomas cross canal, in Yolo County (see Attachment C). This reach of the levee is maintained by Reclamation District (RD 1600).

**4.0 - DESCRIPTION**

The proposed project is a fisheries enhancement project on 100 acres of floodplain habitat along the lower Sacramento River at the Fremont Landing Conservation Bank. The fisheries improvement project includes the enhancement of 60 acres of floodplain and slough channel habitat. The project will be implemented in three phases: Phase 1 includes the excavation of oxbow slough channels (60,000 cubic yards) to prevent fish stranding. Phase II involves the enhancement of aquatic habitat along the riverbank, and Phase III includes the planting of vegetation across the floodplain.

## **5.0 – PROJECT ANALYSIS**

### **5.1 – Project Background**

The majority of the project site was used for agricultural purposes (including walnut orchards and row crops) until the late 1980's. After agricultural uses ceased due to hydrological conditions, the site was maintained by Reclamation District 1600 by periodic disking to remove vegetation. Mature vegetation is currently established along three borrow pits adjacent to a federal levee that runs along the southern boundary of the project site and along the edge of the Sacramento River. While the mature vegetation provides good fisheries habitat, the borrow pits kill juvenile fish because they have no outlets. Fish will enter the site during high water periods, but they become stranded in the pits as the water level drops.

The U.S. army Corps of Engineers has verified the presence of approximately 103 acres of wetlands within the bank's study area in September 2005 which is adjacent to the project levee within the proposed project boundaries.

The proposed project has been designed to benefit both flood control and provide enhancements for listed fisheries. The proposed project entails the construction of four slough channels to drain the existing borrow pits, which were originally excavated from the floodplain to provide material for the levee. Native fishes access the site during flood events, and as flood waters recede, the fish get trapped in the low-lying borrow pits. Thus, these borrow pits currently trap and potentially strand and kill native juvenile fish—in particular listed Central Valley steelhead and several runs of Chinook salmon. Nearly one-mile of borrow pits will be reconnected to the river to alleviate juvenile salmon stranding and drain standing water from the toe of the levee.

### **5.2 - Project Design Review**

The Flood System Improvements Section staff completed a technical review of the following documents:

- Application Form 3615
- Figures 1-7
- Representative Photographs of the Site
- Plan Sheets 17 each
- Hydrodynamic Modeling to Assess Potential Flood Conveyance Effects of Proposed Enhancement Actions (Philip Williams Assoc. 2010)
- Questionnaire 3615a (Environmental Assessment Questionnaire)
- Section 404 Request for Nationwide Permit 27 (includes Section 7 Consultations)
- Section 401 Water Quality Certification
- Section 402 Stormwater Construction Permit
- Section 1600 Streambed Alteration Agreement

- Adopted Initial Study/ Mitigated Negative Declaration, w/ Biological Resources Report
- Fremont Landing Conservation Bank Management Plan
- Title Report and Summary of Existing Easements
- Recorded Conservation Easement for the Fremont Landing Conservation Bank.

This technical review concluded that the designs for the Fremont Landing site are in accordance with Board, USACE standards, and DWR Interim Levee Design Criteria.

### **5.3 – Hydraulic analysis**

Philip Williams and Associates, Ltd. (PWA) conducted the hydraulic and hydrologic (H&H) analysis for the proposed project. PWA performed 2D hydrodynamic modeling using DHI Water & Environment's MIKE 21C software. The use of this tool allowed for the examination of entire flood hydrographs—not just peak flood conditions. Analysis of model run outputs for proposed conditions involved an examination of each model mesh cell, selecting the maximum values for each cell (be it water velocity or water surface elevation) across the entire time series of the flood hydrograph. These maximums were then compared to existing conditions' values obtained in the same manner. This provided an exhaustive examination of the project site for proposed actions. The results of this assessment show that during flood conditions the site functions as a null point for flood flow conveyance, and following project implementation the overall flood capacity and conveyance attributes of the Fremont Landing site will be retained along with benefits to levee stability.

From table 3. Page 5 Of the PWA report of April 20, 2010 the Comp Study UNET model peak discharges are:

	<u>Peak Discharge (cfs)</u>	
	<u>100-yr</u>	<u>200-yr</u>
Sutter Bypass (RM 58.3)	376,830	451,240
Feather River (RM 0.2)	106,240	124,390

100-yr. velocities range between 1.6 to 2.4 ft./sec. along the south and west levee toe and 6.4 to 7.2 ft./sec. through the centerline of the Sacramento River at the project location

AND

200-yr. velocities range between 2.4 to 3.2 ft./sec. along the south and west levee toe and 7.2 to 8.0 ft./sec. through the centerline of the Sacramento River at the project location

Vegetation maintenance (supported by an endowment and a long term management plan) will occur on site. Additionally, plantings and natural recruitment are not anticipated to result in a complete coverage of the site in riparian vegetation.

Regardless, modeling of the proposed project condition utilized a very conservative roughness coefficient (a Manning's n-value of  $n=0.120$ ) to demonstrate that the proposed project, even under very dense, unmaintained vegetation conditions that are not likely to ever occur, would still not result in impacts to the flood control system.

The few locations with increases in water velocities and water surface elevations occur in the main channel, away from levees, and are insignificant. The model results indicated that the proposed project produces little change in water surface elevation – less than 0.1 foot maximum, but most changes were much smaller, approximately 0.01 foot within the project area. A localized water surface increase of 0.3 feet occurs away from the levees in the Sacramento River between Sacramento Slough and the Feather River. Along the levee, water surface elevations are slightly decreased.

The model also predicts isolated, localized increases in water velocities up to 0.3 feet/second in the Sacramento River at the upstream end of the site and localized increases up to 0.2 feet/second in the Sacramento River in the vicinity of the Natomas Cross Canal, but these increases are out in the river upstream of the bifurcation of the Sutter Bypass and none of the increases are directly adjacent to the levee system. Along the levee, water velocities decrease up to 0.26 feet per second under 100- and 200-year flood events.

These very minor increases in water surface elevations and velocities are isolated, do not occur along the levees, and are considered insignificant.

The model results also demonstrate that the proposed project would not impact the flow split between the Fremont Weir and the Sacramento River. The percent change in peak discharge and cumulative volume through each part of the flow split are less than 0.1 and therefore insignificant.

### **5.3.1 – Sediment transport and settlement**

There are existing heavy sediment laden flows both on the upstream Feather River and the Sacramento River. This proposed project does not impact the continued transport nor the settlement of sediment. Based on modeled velocities, it was determined that the most likely particle sizes would be fine silts and clays. The only sediment likely to be transported across the project site is of a size that begins to settle only when velocities fall below 0.1 ft./sec. Decreases in velocity potential caused by the project do not appear sufficient to appreciably increase the deposition of sediment on the site.

## **5.4 – Geotechnical Analysis**

There is no impact to the existing levees.

### **5.4.1 – Proposed Channel Excavation**

The four channels consist of the following characteristics:

<u>Dwg.#</u>	<u>TopWidth</u>	<u>Bot.Width</u>	<u>Depth</u>	<u>Length(ft)</u>	<u>Slope</u>	<u>~Exc. CY</u>
1.1	150'	20'	13.0'	970	0.10%	33,000
1.2	120'	20'	14.0'	550	0.24%	5,000
1.3	130'	20'	13.2'	920	0.10%	13,200
1.4	120'	20'	11.75'	320	0.15%	<u>8,300</u>
						59,500
Total =						60,000 cy

The 60,000 cy of excavation will be spoiled on the landside of the levee.

## **5.5 – Project Benefits**

1. Credits purchased to date have provided critical offsets for:
  - a. DWR – Critical Levee Erosion Sites
  - b. Reclamation Districts – White Mallard Dam Replacement
  - c. U.S. Army Corps of Engineers – Sacramento River Bank Protection Project & P.L. 84-99 Program
  - d. PG&E – Utility Line Crossing of Sacramento River
  - e. Caltrans – Antioch Bridge Seismic Retrofit
  - f. Kinder Morgan Energy Partners – Old River Emergency
2. Streamlines permitting process for essential infrastructure projects:
  - a. Flood control projects
  - b. Water users projects
  - c. Utility improvement projects
  - d. Emergency repairs
3. Critical to recovery of listed species

## **5.6 - Project Specific Issues and Mitigations**

1. Fremont Landing Site
  - 100 Acres – fallow agricultural field with borrow pits that trap and kill listed salmonids.

1. Within the main site, 40 of those acres has been preserved as habitat along the Sacramento River bank on the north end.
  - Site permanently protected through a conservation easement
  - Essential to alleviate fish stranding in borrow pits and restore floodplain to aid recovery of listed salmonids
2. Proposed Enhancement Actions
  - a. Connect borrow pits to the Sacramento River
  - b. Enhance Shaded Riverine Aquatic (SRA) habitat
  - c. Restore riparian floodplain habitat
  - d. Provide fishing and hunting management practices to control exploding populations
3. Designed to maintain current hydraulic and geomorphic processes

The above concerns and mitigations are incorporated into the approved drawings and Board staff has reviewed the above proposed design and the design is in compliance with standards.

### **5.7 – Management and Maintenance Activities**

Long-term maintenance and monitoring of the site will include annual qualitative assessments to identify any potential issues. Because the site is intended to serve as habitat for fish and wildlife, natural debris will not be removed on an annual basis. However, if the presence of natural debris is adversely affecting the habitat or its stability, the debris will be removed using a method to minimize further disturbance of the site. Any trash or unwanted debris that is deposited by flood flows will be regularly removed from the site; assessments for trash will be conducted quarterly. Other maintenance will include invasive plant removal and the maintenance of hydrologic connections between the borrow pits and the Sacramento River. Although the channel connections have been designed to be self-maintaining, there may be times, particularly after flood events, when sediment and debris may clog the channels. Specific long-term management and maintenance are:

1. Inspection of large woody debris to ensure that they remain adequately secured and scour is not becoming excessive.
2. Inspection of slough channels and the removal of excessive sediment and debris that clogs the channel.
3. Treatment and removal of invasive vegetation through hand mechanical removal methods (e.g., weed wrench, chainsaw, mowers and harrows), use of herbicides, and eventually the use of livestock (e.g., goats or sheep (after herbicides have been neutralized)).
4. The removal of trash or other unwanted debris, where debris is defined as non-biodegradable non-organic material including but not limited to household trash, derelict vehicles, plastic containers, etc. Flood transported organic material such as trees, shrubs, and branches will not

be removed unless they pose a threat to the function of one of the hydraulic connections or if the debris contains invasive plant propagules.

## **5.8 – Management and Maintenance DWR & RD1600**

RD 1600 has endorsed the project and expressed their support of restoring vegetation along the riverbank to minimize its encroachment toward the levee footprint. Maintenance of the levee will remain with RD 1600 per requirements, but Wildlands has established an Operations and Maintenance Agreement to delineate maintenance obligations. Wildlands has agreed to maintain a 15-foot wide swath along the base of the levee to allow RD 1600 to conduct its regular levee maintenance activities and to allow for visual inspections of levee integrity and access for flood fight.

### **5.8.1 – Management and Maintenance Endowment**

No project activities are planned to occur within 30 feet of the levee. The endowment fund established for the Bank is non-wasting and specifically provides funds in perpetuity to manage and maintain the site on an annual basis. The endowment fund will provide for long-term maintenance and management of the flood control and habitat features of the project.

## **5.9 – Planting specifics**

### **RIPARIAN and CHANNEL SEED MIX**

<u>Name</u>	<u>Lbs/Acre</u>
Deergrass	1.0
Creeping Wild Rye	5.0
Meadow barley	<u>5.0</u>
Total =	11.0

### **LIVE STAKE PLANTINGS (52 acres)**

<u>Name</u>	<u>Spacing</u>	<u>Quantity</u>
Fremont Cotton	16 ft.	2,212 each
Oregon Ash	16 ft.	2,212 each
Box Elder	16 ft.	2,212 each
Willow	16 ft.	<u>2,212 each</u>
Total =		8,848

## **6.0 – AGENCY COMMENTS AND ENDORSEMENTS**

After review of the project, the following details of the current design have been outlined below.

### **6.1 – RD 1600 (Yolo County) Special Conditions**

(South of the project site)  
Kent Lang, President (916) 372-3884 Bus  
District Office (530) 662-7367 Bus

*The conditions will be attached to the proposed Permit No. 18603 as Exhibit B.*

### **6.2 – RD 1000 (Sacramento County) Special Conditions**

(East of the Sacramento River and East of the project site)  
Paul Devereux, GM (916) 922-1449 Bus  
Don Caldwell, Foreman (916) 922-1449 Bus  
Pdevereux@RD1000.org

*No comments*

### **6.3 – RD 1001 (Sutter County) Special Conditions**

(North of the project site)  
Diane Fales, Manager (530) 632-5258 cell  
Robert Scheiber, President (530) 656-2422 Hm  
David A. Williams, Supervisor (530) 632-5255 cell  
District Office (530) 656-2318 Bus  
RD1001@syix.com

*No comments*

## **7.0 – PROPOSED CEQA FINDINGS**

Board staff has prepared CEQA findings (see Attachment D) for this project. Board staff finds that although the proposed project could have a potentially significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent.



## **8.0 – SECTION 8610.5 CONSIDERATIONS**

1. Evidence that the Board admits into its record from any party, State or local public agency, or nongovernmental organization with expertise in flood or flood plain management:

The Board will make its decision based on the evidence in the permit application and attachments, this staff report, and any other evidence presented by any individual or group.

2. The best available science that related to the scientific issues presented by the executive officer, legal counsel, the Department or other parties that raise credible scientific issues.

The accepted industry standards for the work proposed under this permit as regulated by Title 23 have been applied to the review of this permit.

3. Effects of the decision on the entire State Plan of Flood Control:

This project does not have significant impacts on the State Plan of Flood Control, as the project does not impair the structural or hydraulic functions of the system.

4. Effects of reasonable projected future events, including, but not limited to, changes in hydrology, climate, and development within the applicable watershed:

Climate change issues have not been taken into account; however, it is assumed to be inland past the point tidal influence raises WSE. There are no other foreseeable projected future events that would impact this project.

## **9.0 - STAFF RECOMMENDATION**

Staff recommends that the Board adopt the CEQA findings, Resolution No. 10-29 approve the permit conditioned upon receipt of a favorable U.S. Army Corps of Engineers comment letter and direct staff to file a Notice of Determination with the State Clearinghouse.

## **10.0 - LIST OF ATTACHMENTS**

- A. Resolution No. 10-29
- B. Draft Permit No. 18603
  - Exhibit A – Corps 208.10 Letter, to come.
  - Exhibit B – RD 1600 Special Conditions
  - Exhibit C – RD 1000 Conditions (No comments by July 14)
  - Exhibit D – RD 1001 Conditions (No comments by July 14)
- C. Location Map
- D. Proposed CEQA Findings
- E. Overall Plan View
- F. Typical Section
- G. List of Figures for 100 and 200 year flood events, Velocity and Water Surface Elevations
- H. Water Surface Profiles; 14 plan & profile sheets.

Prepared by:	David R. Williams, P.E. Nancy Moricz, P.E.
Design Review by:	David R. Williams, P.E.
Geotechnical Review by:	David R. Williams, P.E.
Hydraulic Review by:	David R. Williams, P.E. & Sungho Lee, PhD
Final Reviews by:	Dan Fua, P.E. Len Marino, P.E.

STATE OF CALIFORNIA  
THE RESOURCES AGENCY  
CENTRAL VALLEY FLOOD PROTECTION BOARD

RESOLUTION NO. 10-29

FINDINGS AND DECISION AUTHORIZING ISSUANCE OF  
ENCROACHMENT PERMIT NO. 18603  
WILDLANDS, INCORPORATED

**WHEREAS**, Wildlands, Inc. proposes to create the Fremont Landing Conservation Bank area on 100 acres of floodplain habitat; and

**WHEREAS**, the project is a fisheries enhancement project on 100 acres of floodplain habitat along the lower Sacramento River at the Fremont Landing Conservation Bank. The fisheries improvement project includes the enhancement of 60 acres of floodplain and slough channel habitat. The project includes the excavation of oxbow slough channels (60,000 cubic yards) to prevent fish stranding, the enhancement of aquatic habitat along the riverbank, and the planting of vegetation across the floodplain. The project is located east of Knights Landing and east of the Fremont Weir; and

**WHEREAS**, the Fremont Landing Conservation Bank provides compensatory off-site mitigation for impacts to Chinook salmon habitat; and

**WHEREAS**, approval of Encroachment Permit No. 18603 is conditioned upon receipt of a favorable U.S. Army Corps of Engineers comment letter for application 18603; and

**WHEREAS**, the California Department of Fish and Game as lead agency under the California Environmental Quality Act, Public Resources Code sections 21000 et seq. ("CEQA") prepared and reviewed an Initial Study, Mitigated Negative Declaration (IS/MND) and Mitigation Monitoring Plan ("MMP") (State Clearinghouse No.: 2009082025, July 2009) for the Fremont Landing Conservation Bank (incorporated herein by reference and available at the office of the Central Valley Flood Protection Board or California Department of Fish and Game); and

**WHEREAS**, On December 21, 2009, the California Department of Fish and Game made CEQA Findings, approved the IS/MND, mitigation measures and a MMP; and

**WHEREAS**, the Central Valley Flood Protection Board has conducted a hearing and has reviewed the application, the Report of its staff, the documents and correspondence in its file, and the environmental documents prepared by Wildlands, Inc.;

NOW, THEREFORE, BE IT RESOLVED THAT,

**Findings of Fact.**

1. The Central Valley Flood Protection Board hereby adopts as findings the facts set forth in the Staff Report.
2. The Board has reviewed the Attachments listed in the Staff Report.

**CEQA Findings.**

3. The Central Valley Flood Protection Board, as a responsible agency, has independently reviewed the analysis in the IS/MND and MMP, and the findings prepared by the lead agency California Department of Fish and Game, and has reached its own conclusions.
4. The Central Valley Flood Protection Board, after consideration of the IS/MND and MMP, and California Department of Fish and Game findings, adopts the project description, analysis and Findings which are relevant to activities authorized by issuance of final encroachment Permit No. 18603 Wildlands, Inc., Fremont Landing Conservation Bank Project.
5. **Custodian of Record.** The custodian of the CEQA record for the Board is its Executive Officer, Jay Punia, at the Central Valley Flood Protection Board Offices at 3310 El Camino Avenue, Room 151, Sacramento, California 95821.

**Findings pursuant to Water Code section 8610.5**

6. **Evidence Admitted into the Record.** The Board has considered all the evidence presented in this matter, including the original and updated applications, past and present Staff Reports and attachments. The Board has also considered all letters and other correspondence received by the Board and in the Board's files related to this matter.

The custodian of the file is Executive Officer Jay Punia at the Central Valley Flood Protection Board.

7. **Best Available Science.** In making its findings, the Central Valley Flood Protection Board has used the best available science relating to the issues presented by all parties.
8. **Effects on State Plan of Flood Control.** This project has no effects on the State Plan of Flood Control.

**Other Findings/Conclusions regarding Issuance of the Permit.**

9. This resolution shall constitute the written decision of the Central Valley Flood Protection Board in the matter of Permit No. 18603.

**Approval of Encroachment Permit No. 18603**

10. Based on the foregoing, the Central Valley Flood Protection Board hereby approves the Fremont Landing Conservation Bank and approves issuance of Encroachment Permit No. 18603 in substantially the form provided as Attachment B of the Staff Report.
11. The Central Valley Flood Protection Board directs the Executive Officer to take the necessary actions to prepare and execute the permit and related documents and to approve the permit for the Wildlands, Inc., Fremont Landing Conservation Bank Project.

PASSED AND ADOPTED by vote of the Board on \_\_\_\_\_, 2010

\_\_\_\_\_  
Benjamin F. Carter  
President

\_\_\_\_\_  
Maureen (Lady Bug) Doherty  
Secretary

**DRAFT**

STATE OF CALIFORNIA  
THE RESOURCES AGENCY  
**THE CENTRAL VALLEY FLOOD PROTECTION BOARD**

**PERMIT NO. 18603 BD****This Permit is issued to:**

Fremont Landing Conservation District  
3855 Artherton Road  
Rocklin, California 95765

To excavate approximately 60,000 cubic yards of soil and create slough channels 50-feet-wide, 10 to 15-feet-deep with 5 to 1 side slopes; plant native vegetation along the river bank and overflow area of the right (west) bank of the Sacramento River. The project is located east of Knights Landing and east of the Fremont Weir (Section 23,23&27, T11N, R3E, MDB&M, Reclamation District 1600, Sacramento River, Yolo County).

**NOTE:** Special Conditions have been incorporated herein which may place limitations on and/or require modification of your proposed project as described above.

**(SEAL)**

Dated: \_\_\_\_\_

\_\_\_\_\_  
Executive Officer**GENERAL CONDITIONS:**

**ONE:** This permit is issued under the provisions of Sections 8700 – 8723 of the Water Code.

**TWO:** Only work described in the subject application is authorized hereby.

**THREE:** This permit does not grant a right to use or construct works on land owned by the Sacramento and San Joaquin Drainage District or on any other land.

**FOUR:** The approved work shall be accomplished under the direction and supervision of the State Department of Water Resources, and the permittee shall conform to all requirements of the Department and The Central Valley Flood Protection Board.

**FIVE:** Unless the work herein contemplated shall have been commenced within one year after issuance of this permit, the Board reserves the right to change any conditions in this permit as may be consistent with current flood control standards and policies of The Central Valley Flood Protection Board.

**SIX:** This permit shall remain in effect until revoked. In the event any conditions in this permit are not complied with, it may be revoked on 15 days' notice.

**SEVEN:** It is understood and agreed to by the permittee that the start of any work under this permit shall constitute an acceptance of the conditions in this permit and an agreement to perform work in accordance therewith.

**EIGHT:** This permit does not establish any precedent with respect to any other application received by The Central Valley Flood Protection Board.

**NINE:** The permittee shall, when required by law, secure the written order or consent from all other public agencies having jurisdiction.

**TEN:** The permittee is responsible for all personal liability and property damage which may arise out of failure on the permittee's part to perform the obligations under this permit. If any claim of liability is made against the State of California, or any departments thereof, the United States of America, a local district or other maintaining agencies and the officers, agents or employees thereof, the permittee shall defend and shall hold each of them harmless from each claim.

**ELEVEN:** The permittee shall exercise reasonable care to operate and maintain any work authorized herein to preclude injury to or damage to any works necessary to any plan of flood control adopted by the Board or the Legislature, or interfere with the successful execution, functioning or operation of any plan of flood control adopted by the Board or the Legislature.

**TWELVE:** Should any of the work not conform to the conditions of this permit, the permittee, upon order of The Central Valley Flood Protection Board, shall in the manner prescribed by the Board be responsible for the cost and expense to remove, alter, relocate, or reconstruct all or any part of the work herein approved.

**SPECIAL CONDITIONS FOR PERMIT NO. 18603 BD**

**THIRTEEN:** All work approved by this permit shall be in accordance with the submitted drawings and specifications except as modified by special permit conditions herein. No further work, other than that approved by this permit, shall be done in the area without prior approval of the Central Valley Flood Protection Board.

**FOURTEEN:** Prior to commencement of excavation, the permittee shall create a photo record, including associated descriptions, of the levee conditions. The photo record shall be certified (signed and stamped) by a licensed land surveyor or professional engineer registered in the State of California and submitted to the Central Valley Flood Protection Board within 30 days of beginning the project.

**FIFTEEN:** The permittee shall maintain the permitted encroachment(s) and the project works within the utilized area in the manner required and as requested by the authorized representative of the Department of Water Resources, Reclamation Districts 1600, 1000 and 1001 or any other agency responsible for maintenance.

**SIXTEEN:** The permittee shall defend, indemnify, and hold the Central Valley Flood Protection Board and the State of California, including its agencies, departments, boards, commissions, and their respective officers, agents, employees, successors and assigns (collectively, the "State"), safe and harmless, of and from all claims and damages related to the Central Valley Flood Protection Board's approval of this permit, including but not limited to claims related to the California Environmental Quality Act. The State expressly reserves the right to supplement or take over its defense, in its sole discretion.

**SEVENTEEN:** A copy of this permit shall be included as an attachment to any Fremont Landing Conservation Bank Agreements and Long-Term Management Plan.

EIGHTEEN: All conservation easements established within this project area shall be junior to flowage and maintenance easements within the project limits.

NINETEEN: The permittee shall be responsible for securing any necessary permits incidental to habitat manipulation and restoration work completed in the flood control project, and will provide any biological surveying, monitoring, and reporting needed to satisfy those permits.

TWENTY: The permittee shall provide written assurance to the Central Valley Flood Protection Board that the Fremont Landing Conservation Bank and Endowment Fund can be dispersed to the Central Valley Flood Protection Board or the Department of Water Resources if the land manager fails to fulfill the maintenance requirements defined in this encroachment permit and/or the Fremont Landing Long-Term Management Plan.

TWENTY-ONE: No construction work of any kind shall be done during the flood season from November 1 to April 15 without prior approval of the Central Valley Flood Protection Board.

TWENTY-TWO: The Central Valley Flood Protection Board, Department of Water Resources, and Reclamation Districts 1600, 1000, and 1001 shall not be held liable for damages to the permitted encroachment(s) resulting from releases of water from reservoirs, flood fight, operation, maintenance, inspection, or emergency repair.

TWENTY-THREE: The permittee shall be responsible for repair of any damages to the project levee and other flood control facilities due to construction, operation, or maintenance of the proposed project.

TWENTY-FOUR: The permittee is responsible for all liability associated with construction, operation, and maintenance of the permitted facilities and shall defend and hold harmless the Central Valley Flood Protection Board, Department of Water Resources, or Reclamation Districts 1600, 1000, and 1001, their officers, employees, agents and any departments thereof, from any liability or claims of liability associated therewith.

TWENTY-FIVE: The permittee shall provide supervision and inspection services acceptable to the Central Valley Flood Protection Board. A professional engineer registered in the State of California shall certify that all work was inspected and performed in accordance with submitted drawings, specifications, and permit conditions.

TWENTY-SIX: To ensure the protection of valuable riparian habitat, no native trees, shrubs, or other woody vegetation greater than 6 inches in diameter at the base shall be removed or disturbed unless otherwise authorized in the Special Conditions herein.

TWENTY-SEVEN: Proposed vegetative rows shall be parallel to the direction of the overbank flow and shall not direct the flows toward any levee, and shall be constructed in accordance with the Approved Planting Plan.

TWENTY-EIGHT: The ground surface shall be kept clear of fallen trees, branches, and debris.

TWENTY-NINE: The Central Valley Flood Protection Board may require clearing and/or pruning of trees planted within the floodway in order to minimize obstruction to floodflows.



THIRTY: Cleared trees and brush (or prunings therefrom) shall be completely burned or removed from the floodway, and downed trees or brush shall not remain in the floodway during the flood season from November 1 to April 15.

THIRTY-ONE: After each period of high water, debris that accumulates at the site shall be completely removed from the floodway.

THIRTY-TWO: No wild rose, grape, blackberries, or other bushy thickets shall be propagated or otherwise allowed to grow at this site, except for those permitted in the Approved Planting Plan.

THIRTY-THREE: Areas where plantings are lost to erosion shall not be replanted.

THIRTY-FOUR: The landscaping, appurtenances, and maintenance practices shall conform to standards contained in Section 131 of the Central Valley Flood Protection Board's Regulations.

THIRTY-FIVE: Any vegetative material, living or dead, that interferes with the successful execution, functioning, maintenance, or operation of the adopted plan of flood control must be removed by the permittee at permittee's expense upon request by the Central Valley Flood Protection Board, Department of Water Resources, or local maintaining agency. If the permittee does not remove such vegetation or trees upon request, the Central Valley Flood Protection Board reserves the right to remove such at the permittee's expense.

THIRTY-SIX: The permittee shall operate and maintain the permitted encroachment(s) and the project works within the utilized area in the manner required and as requested by the authorized representative of RD 1600, Department of Water Resources, or any other agency responsible for maintenance. Maintenance may include actions to preserve the integrity of the flood control system under emergency conditions. These actions will be taken at the sole expense of the permittee.

THIRTY-SEVEN: This permit is for the benefit and use of the permittee alone and is not transferrable to subsequent owners of the property except as provided in this permit.

THIRTY-EIGHT: The permittee agrees to restore the project area to its baseline condition, as defined in Special Condition FOURTEEN above, prior to transferring title to the property, unless the permittee has received written authorization from the Board to transfer the property without such restoration based on compliance with terms and conditions described in this permit.

THIRTY-NINE: If the planted trees result in an adverse hydraulic impact, the permittee will provide appropriate mitigation.

FORTY: The permittee may be required, at permittee's cost and expense, to remove, alter, relocate, or reconstruct all or any part of the permitted encroachment(s) if removal, alteration, relocation, or reconstruction is necessary as part of or in conjunction with any present or future flood control plan or project or if damaged by any cause. If the permittee does not comply, the Central Valley Flood Protection Board may remove the encroachment(s) at the permittee's expense.

FORTY-ONE: If the project, or any portion thereof, is to be abandoned in the future, the permittee or successor shall abandon the project under direction of the Central Valley Flood Protection Board and

Department of Water Resources, at the permittee's or successor's cost and expense.

FORTY-TWO: The permittee shall contact the Department of Water Resources by telephone, (916) 574-0609, and submit the enclosed postcard to schedule a preconstruction conference. Failure to do so at least 10 working days prior to start of work may result in delay of the project.

FORTY-THREE: The permittee should contact the U.S. Army Corps of Engineers, Sacramento District, Regulatory Branch, 1325 J Street, Sacramento, California 95814, telephone (916) 557-5250, as compliance with Section 10 of the Rivers and Harbors Act and/or Section 404 of the Clean Water Act may be required.

FORTY-FOUR: The permittee shall comply with all conditions set forth in the letter from the U.S. Army Corps of Engineers when it is received, which shall be attached to this permit as Exhibit A and incorporated by reference.

FORTY-FIVE: The permittee shall comply with all conditions set forth in letters from Reclamation Districts 1600, 1000, and 1001, which are attached to this permit as Exhibit B, C, and D respectively, and are incorporated by reference.

JAMES V. NOLAN  
CHRISTOPHER R. HUGO  
ROBERT P. NAKKEN  
DAVID W. JANES

**GARDNER, JANES, NAKKEN,  
HUGO & NOLAN**  
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429 FIRST STREET  
WOODLAND, CALIFORNIA 95695

NEAL CHALMERS (1891-1963)  
CARL E. RODEGERDTS (1903-1971)  
ROGER SANS (1914-2007)  
E.L. MEANS (1911-2009)  
FRANKLIN K. GARDNER (RETIRED)

Of Counsel  
DAVID A. HUGO

(530) 662-7367  
(530) 662-2859  
FAX (530) 666-9116  
www.yololaw.com

*Law West of the River since 1913*

June 7, 2010

David Williams, Senior Engineer  
Central Valley Flood Protection Board  
3310 El Camino Avenue,  
Room 151  
Sacramento, CA 95821

**Re: Fremont Landing Fisheries Enhancement Project (CVFPB Permit #18603)**

Dear Mr. Williams:

I represent Reclamation District 1600. I am writing this letter on behalf of Reclamation District 1600. The District supports the Fremont Landing Fisheries Enhancement Project (Project) proposed by Riparian Ranch, LLC. (Wildlands), which is currently in the process for an encroachment permit. Reclamation District 1600 (District) has been involved in the Project and fully supports Wildlands efforts to bring forth important multi-objective projects that support critical flood control and infrastructure projects in the Central Valley while providing necessary habitat for listed species.

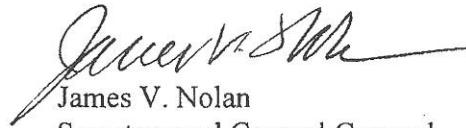
Wildlands has entered into an Operation and Maintenance Agreement with the District that formally details a working relationship to mutually prevent loss of human life and property damage while maintaining habitat quality for listed salmonids on the Fremont Landing floodplain. This Agreement will facilitate the management and maintenance of the Project site to meet public safety and environmental goals in a manner consistent with the District's flood control responsibilities.

This project will provide the District with over 30,000 cubic yards of material that is difficult to obtain and greatly needed to meet District maintenance obligations for flood safety. Wildlands will work with the District to maintain a swath free of woody vegetation to allow for annual maintenance of the levees and keep the area clear for flood inspections. The District maintains that the Project will benefit the flood system, facilitate levee maintenance and inspections, and provide a substantial quantity of materials that will assist the District's maintenance needs.

David Williams, Senior Engineer  
Central Valley Flood Protection Board  
Page 2  
June 7, 2010

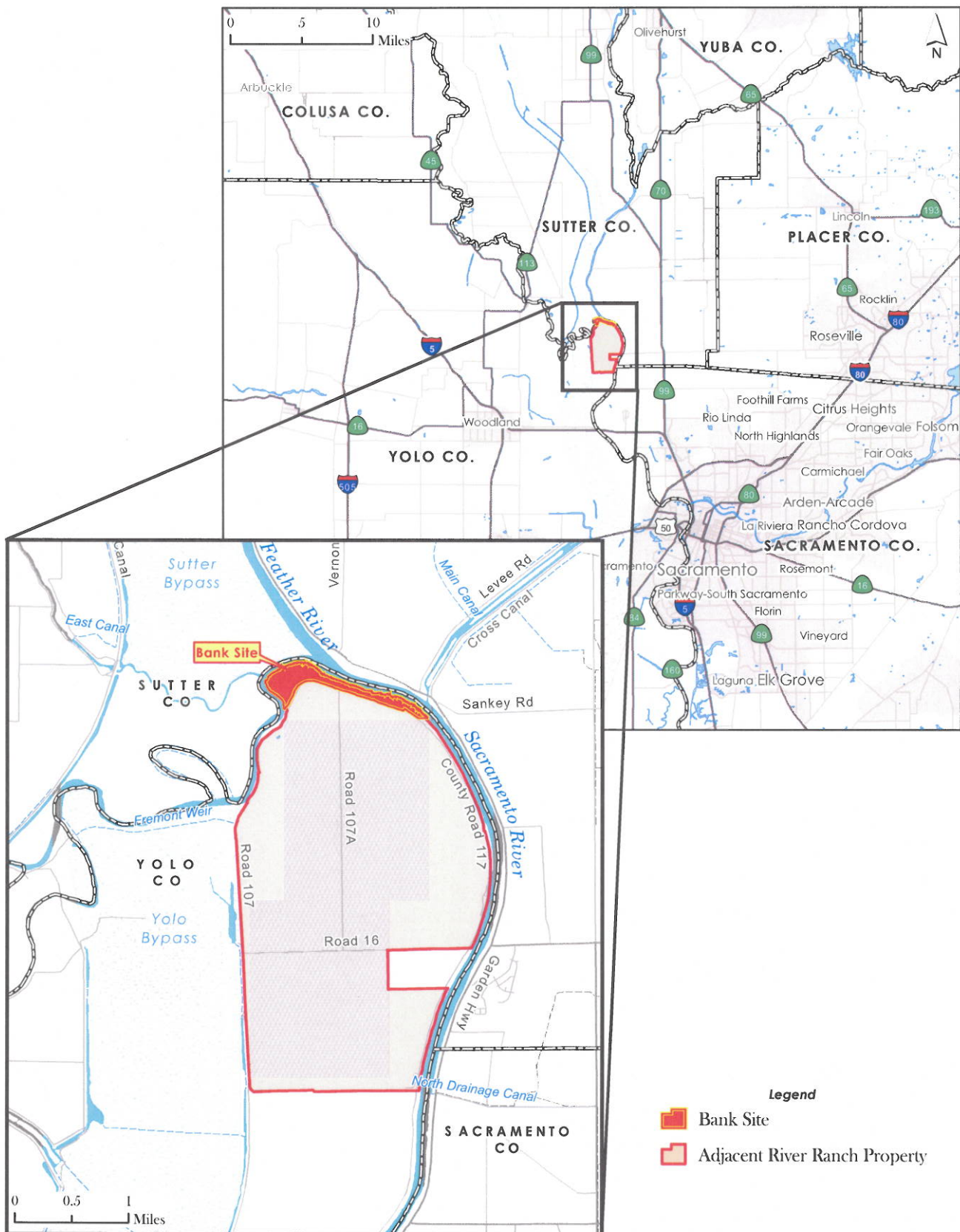
Should you have any questions or concerns, please contact me or Mr. Kent Lang,  
President of the Board of Trustees of Reclamation District 1600. Thank you for your  
time and consideration.

Sincerely,

A handwritten signature in black ink, appearing to read "James V. Nolan", with a long horizontal flourish extending to the right.

James V. Nolan  
Secretary and General Counsel  
Reclamation District 1600

cc: Trustee, RecDist1600  
ALU/Rec1600/Ltr6-7-2010JVN2CVFPB



# WILDLANDS

Fremont Landing Conservation Bank

Figure 1  
Regional Vicinity Map



Proposed CEQA Findings:

Board staff has prepared the following CEQA Findings:

The Board, as a Responsible Agency under CEQA, has reviewed the Initial Study, Mitigated Negative Declaration (IS/MND) and Mitigation Monitoring Plan (State Clearinghouse No: 2009082025, July 2009) for the Fremont Landing Conservation Bank prepared by the lead agency, California Department of Fish and Game. These documents including project design and Reclamation District 2093 resolutions may be viewed or downloaded from the Central Valley Flood Protection Board website at <http://www.cvfpb.ca.gov/meetings/2010/7-22-23-2010agenda.cfm> under a link for this agenda item. The documents are also available for review in hard copy at the Board and County offices.

The California Department of Fish and Game determined that the project would not have a significant effect on the environment and filed a notice of determination with the State Clearinghouse on December 24, 2009. Board staff finds that although the proposed project could have a potentially significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. The project proponent has incorporated mandatory mitigation measures into the project plans to avoid identified impacts or to mitigate such impacts to a point where no significant impacts will occur. These mitigation measures are included in the project proponent's Mitigation Monitoring Plan and address impacts to air quality, biological resources, cultural resources and geology. The description of the mitigation measures are further described in the adopted Mitigation Monitoring Plan.



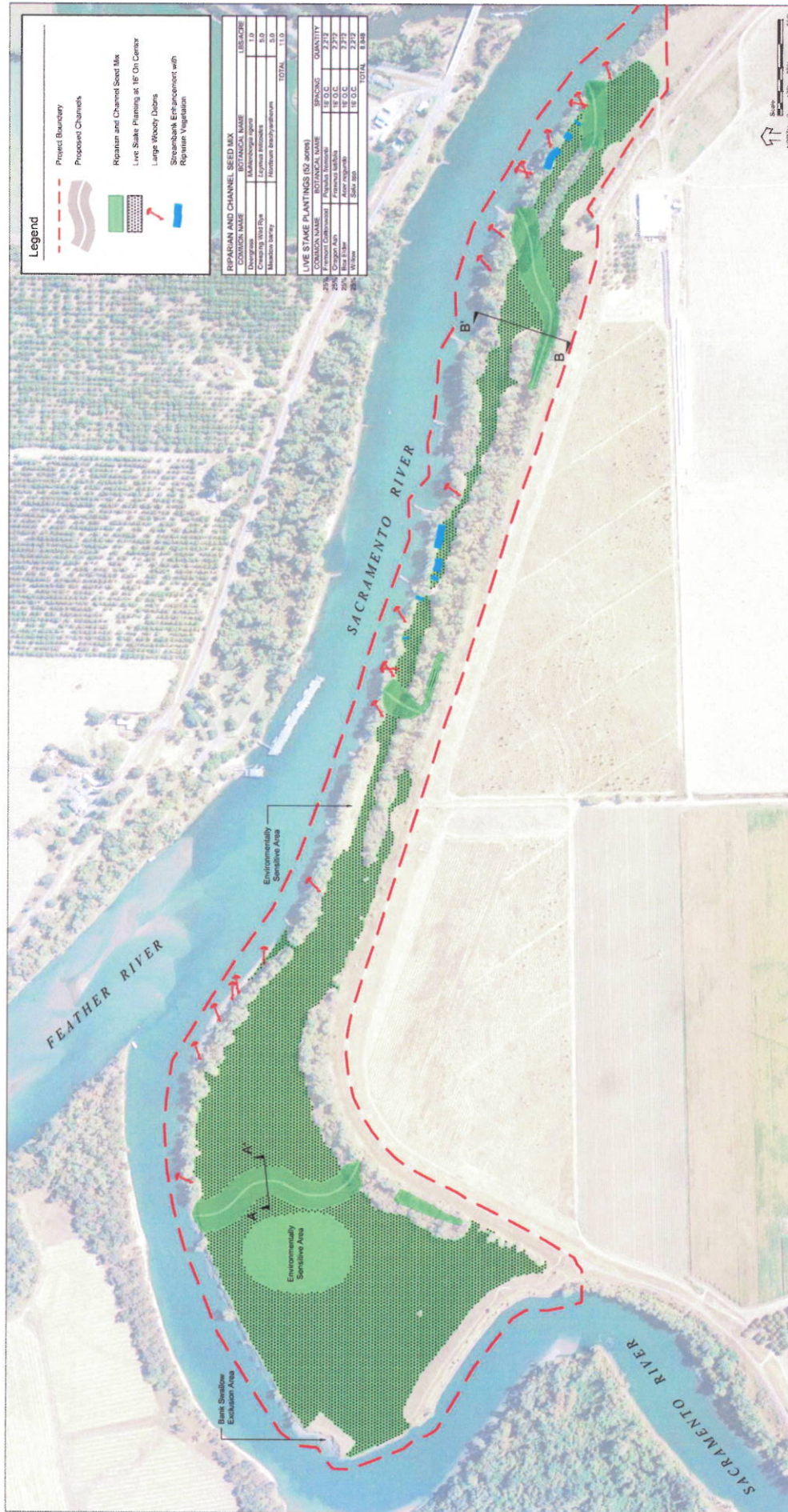
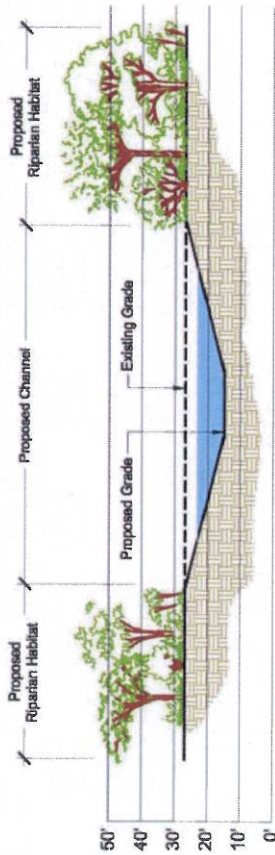


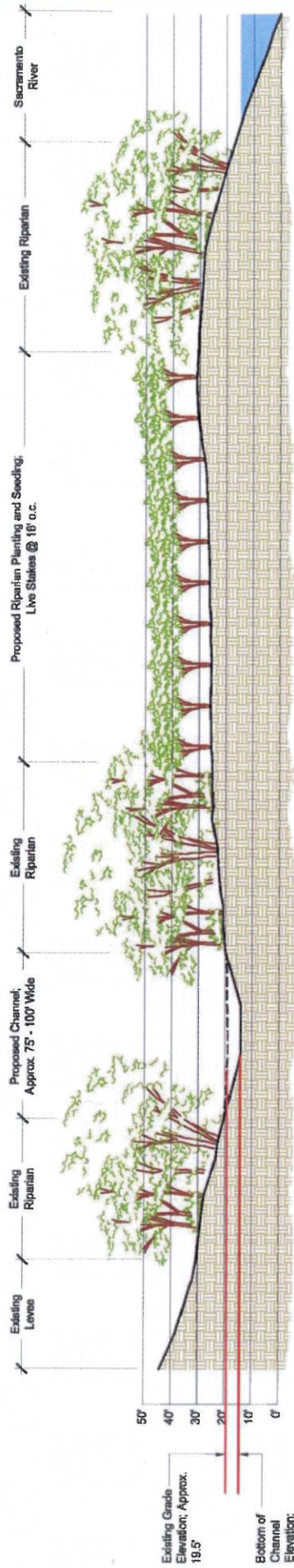
Figure 4  
Project Design and Planting Plan  
April 12, 2010



# Cross Sections



Section A - A'



Section B - B'

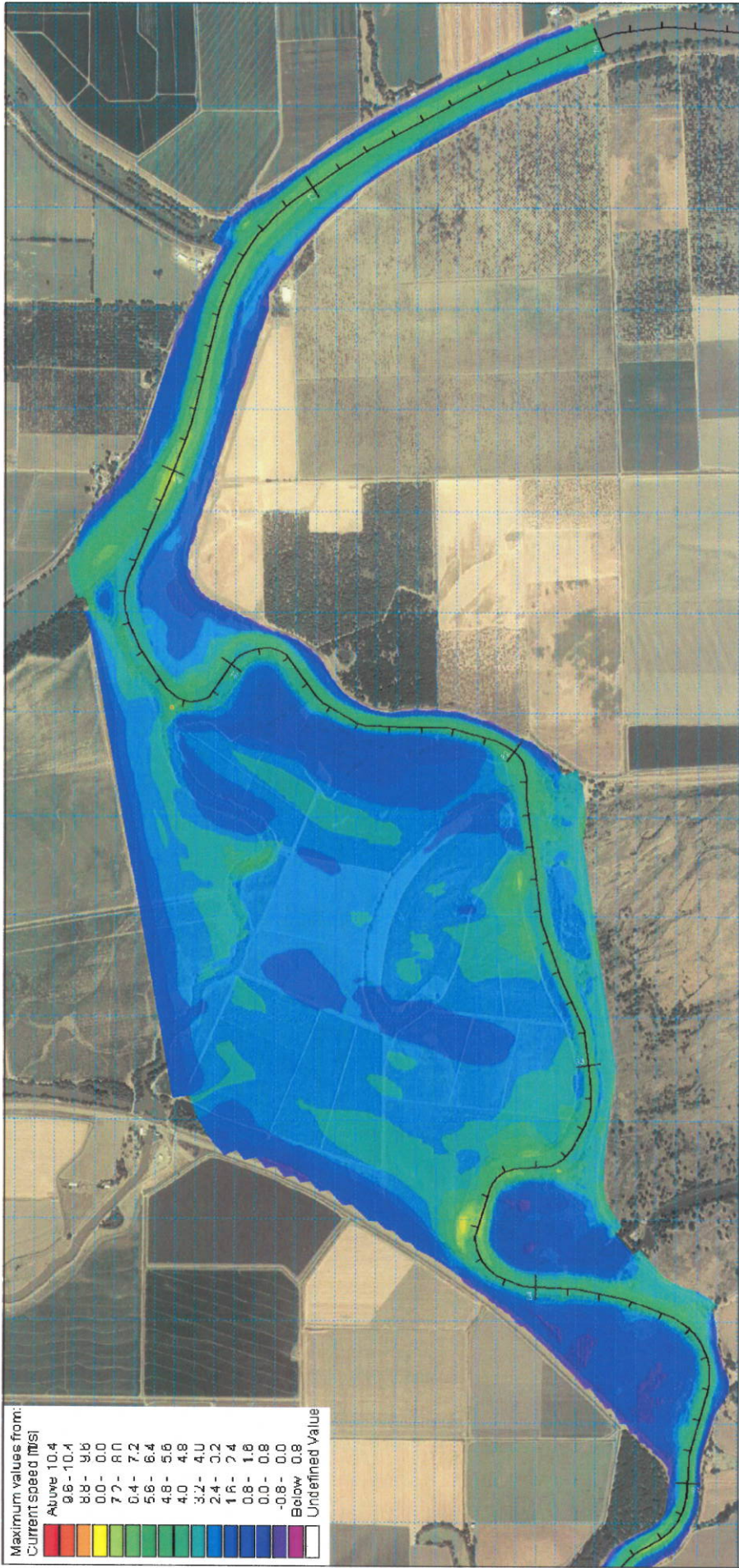




**July 6 2010 PWA Memorandum:**  
**Response to Verbal Comments at Meeting on June 8, 2010 &**  
**CVFPB Letter of July 1, 2010.**

**List of Figures**

1. Comprehensive Study 100-yr Flood Hydrograph: Existing Conditions Maximum Velocities
2. Comprehensive Study 100-yr Flood Hydrograph: Water Surface, Planform & Long Profile along Levee
3. Comprehensive Study 100-yr Flood Hydrograph: Water Surface, Planform & Long Profile along Bank
4. Comprehensive Study 100-yr Flood Hydrograph: Water Surface, Planform & Long Profile along Channel Centerline
5. Comprehensive Study 100-yr Flood Hydrograph: Water Velocity, Planform & Long Profile along Levee
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11. Comprehensive Study 200-yr Flood Hydrograph: Water Surface, Planform & Long Profile along Channel Centerline
12. Comprehensive Study 200-yr Flood Hydrograph: Water Velocity, Planform & Long Profile along Levee
13. Comprehensive Study 200-yr Flood Hydrograph: Water Velocity, Planform & Long Profile along Bank
14. Comprehensive Study 200-yr Flood Hydrograph: Water Velocity, Planform & Long Profile along Channel Centerline



Notes:  
Source: MIKE 21C model outputs (PWA).

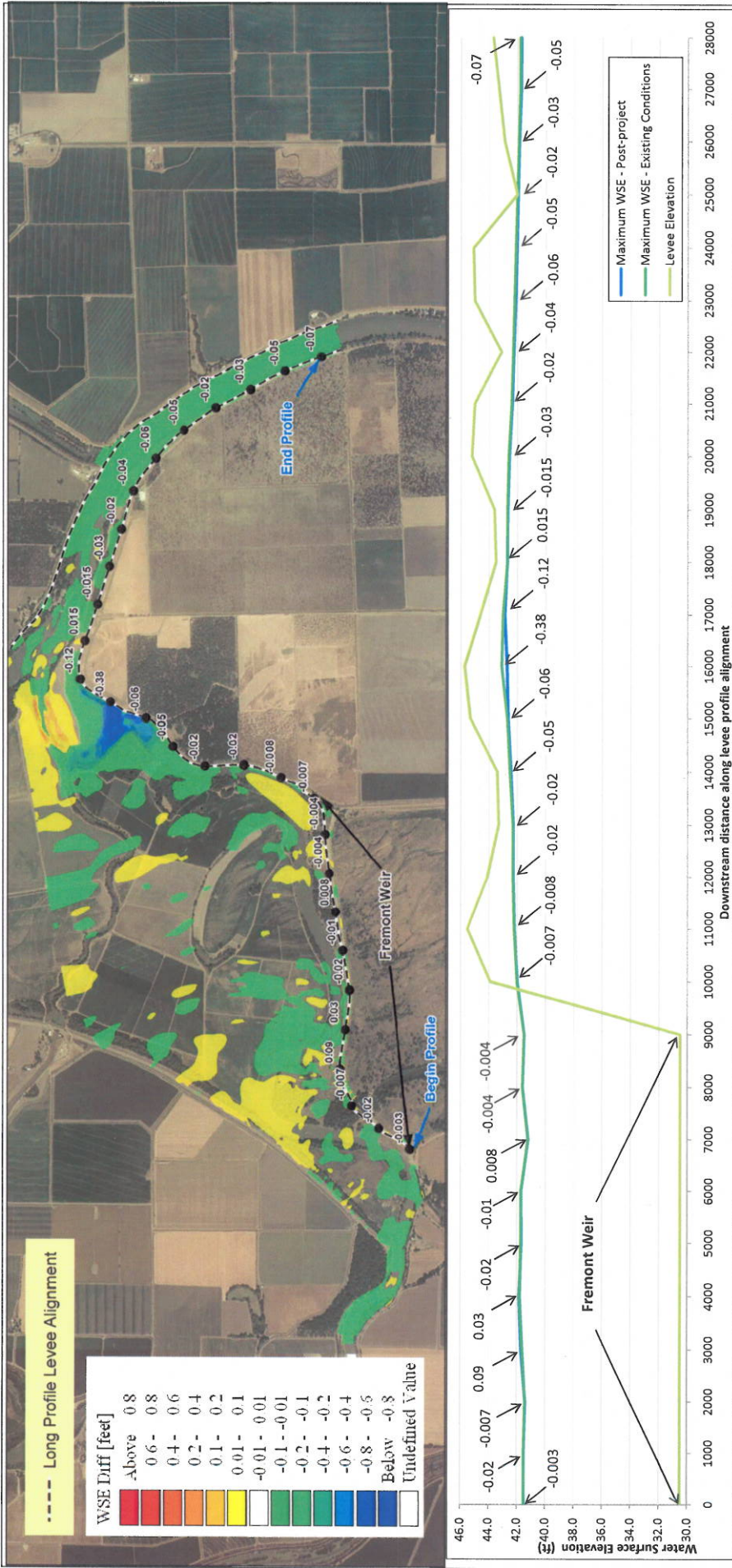
Figure 1  
Fremont Landing Conservation Bank

Comp Study 100-year Flood - Existing Conditions - Maximum Velocity

PWA Ref# 1868.01







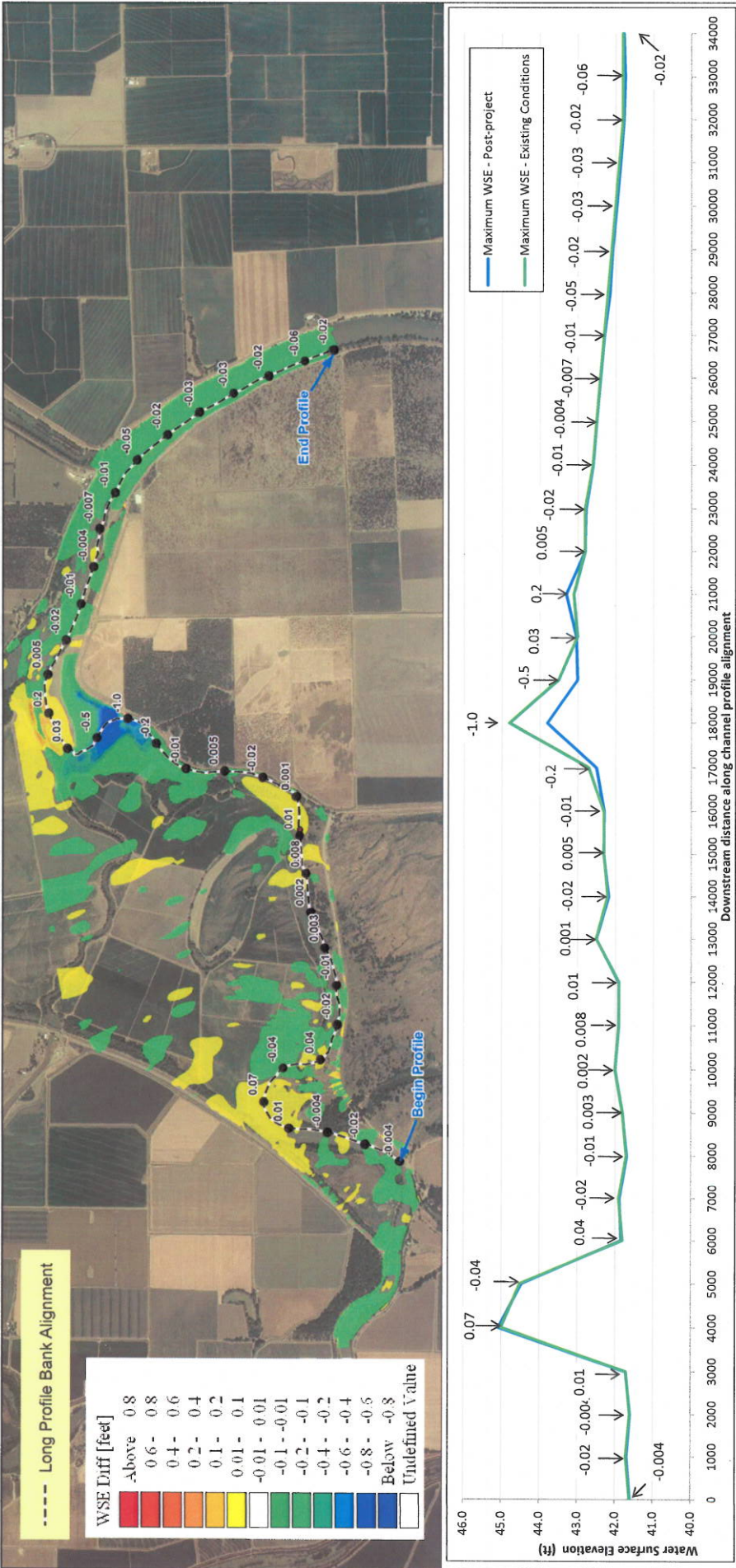
Notes: Longitudinal profiles extracted from values influencing project levee  
Source: MIKE 21C model outputs (PWA).

Figure 2  
Fremont Landing Conservation Bank

Comp Study 100-year Relative Change in Maximum Water Surface  
Elevations From Existing to Proposed Conditions Along Project Levees



PWA Ref# 1868.01



Notes: Longitudinal profiles extracted from values along bank line of channel  
Source: MIKE 21C model outputs (PWA)

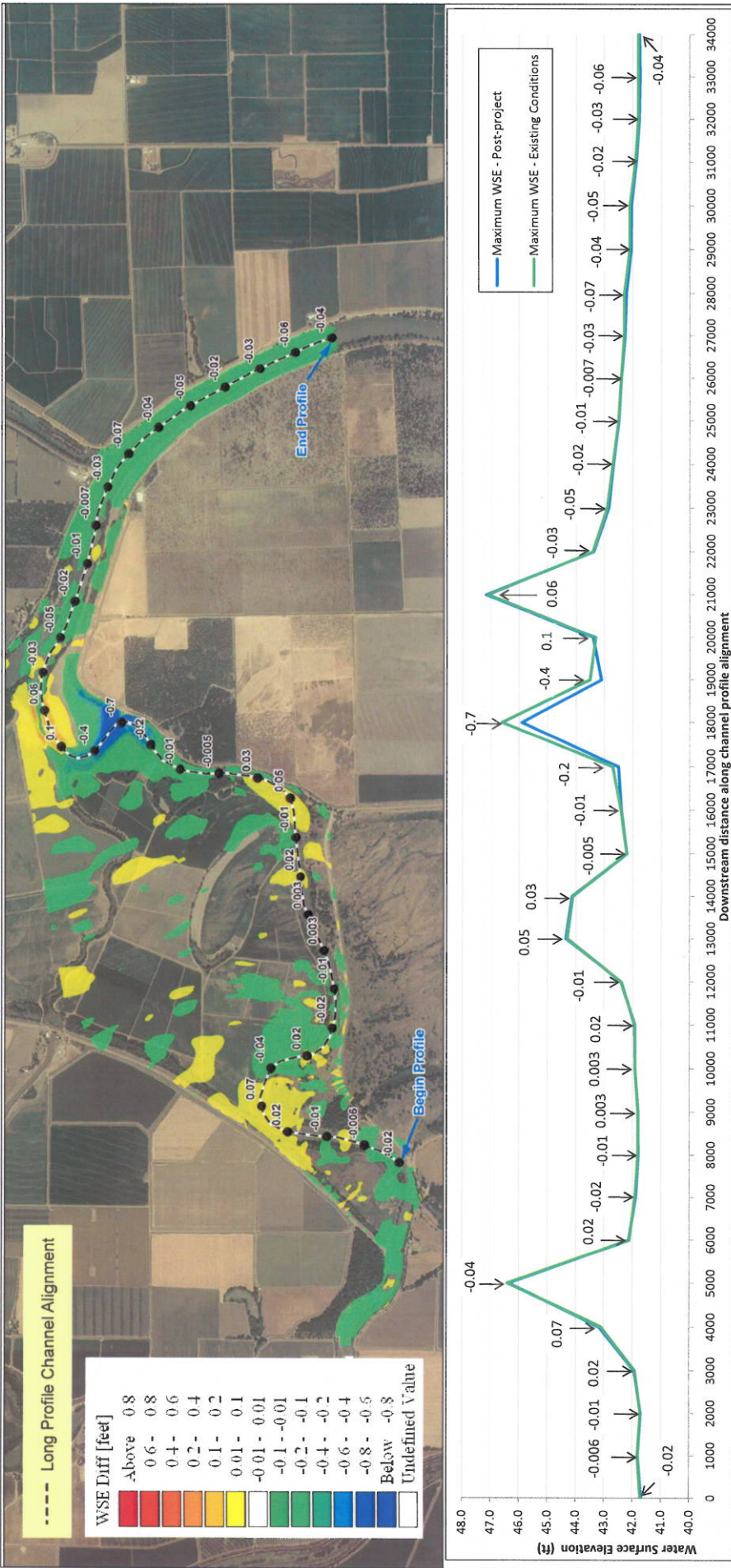
*Figure 3*  
*Fremont Landing Conservation Bank*

Comp Study 100-year Relative Change in Maximum Water Surface Elevations  
From Existing to Proposed Conditions Along Channel Bank

PWA Ref# 1868.01

**PWA**





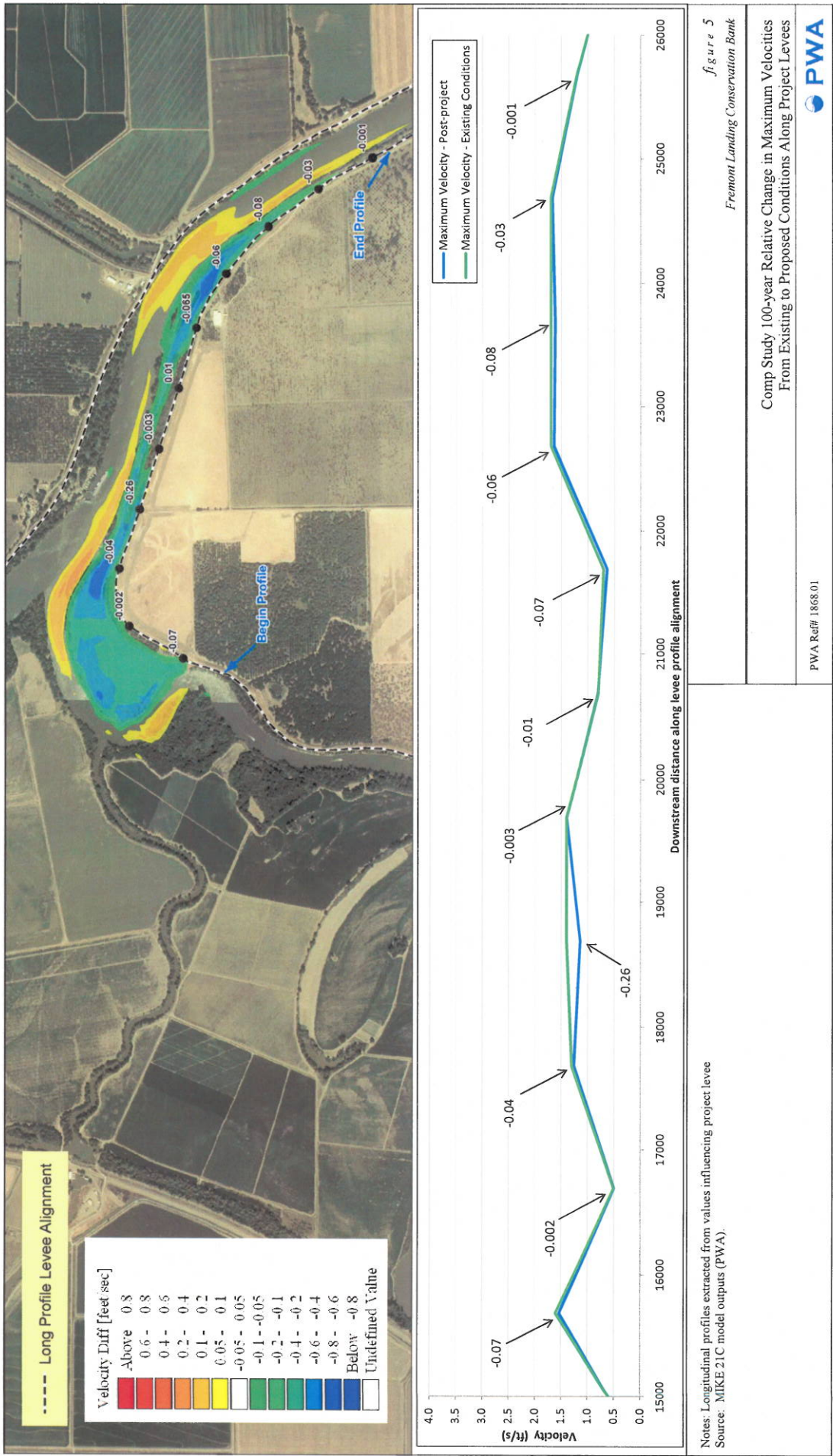
Notes: Longitudinal profiles extracted from values at center of channel  
Source: MIKE 21C model outputs (PWA).

Figure 4  
Fremont Landing Conservation Bank

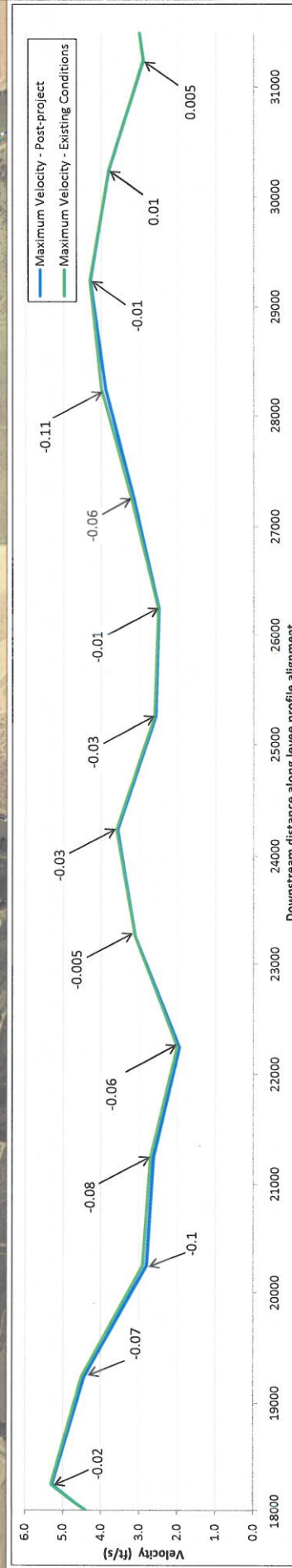
Comp Study 100-year Relative Change in Maximum Water Surface Elevations  
From Existing to Proposed Conditions Along Channel Centerline

PWA Ref# 1868.01







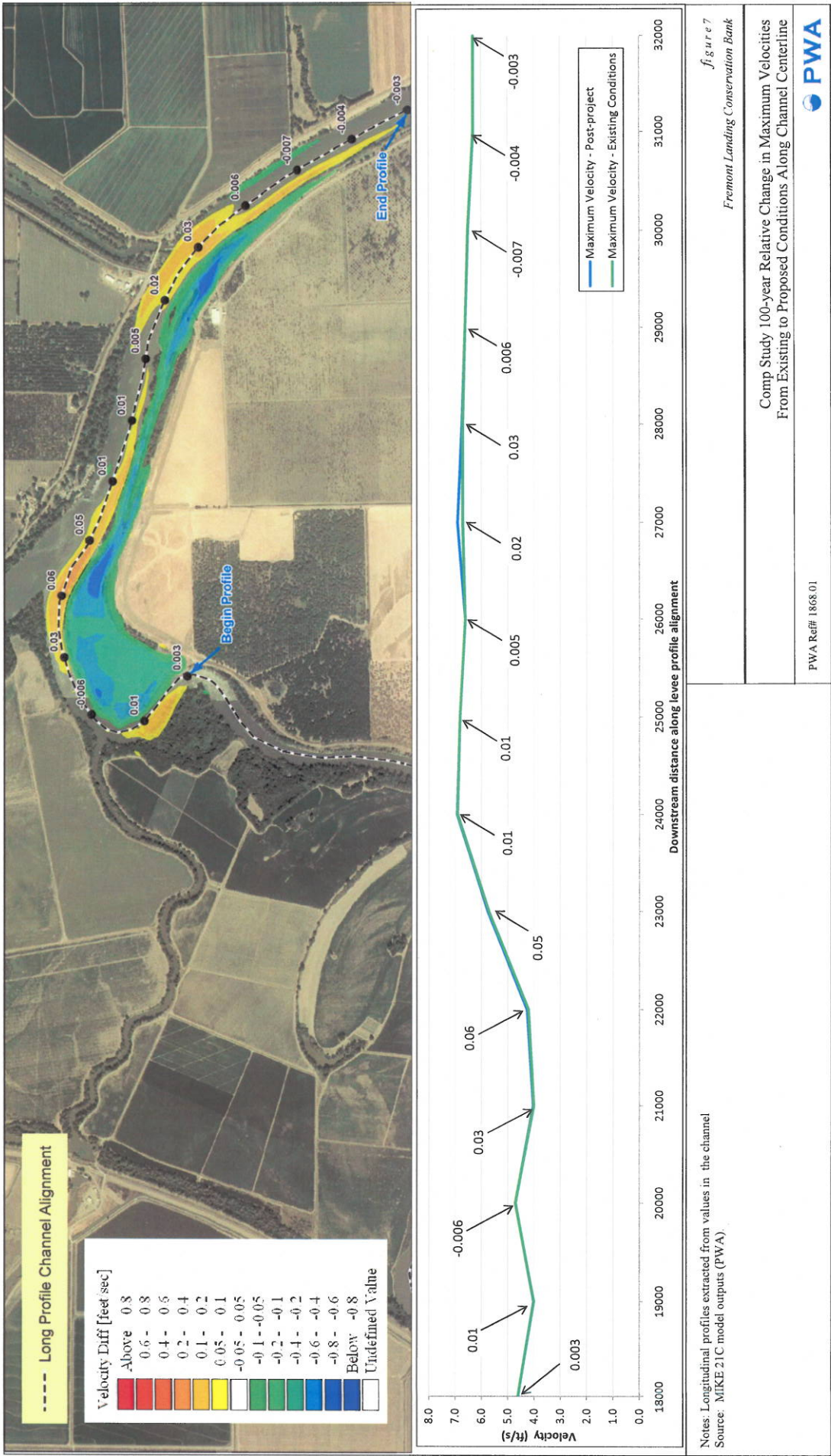


*figure 6*  
*Fremont Landing Conservation Bank*

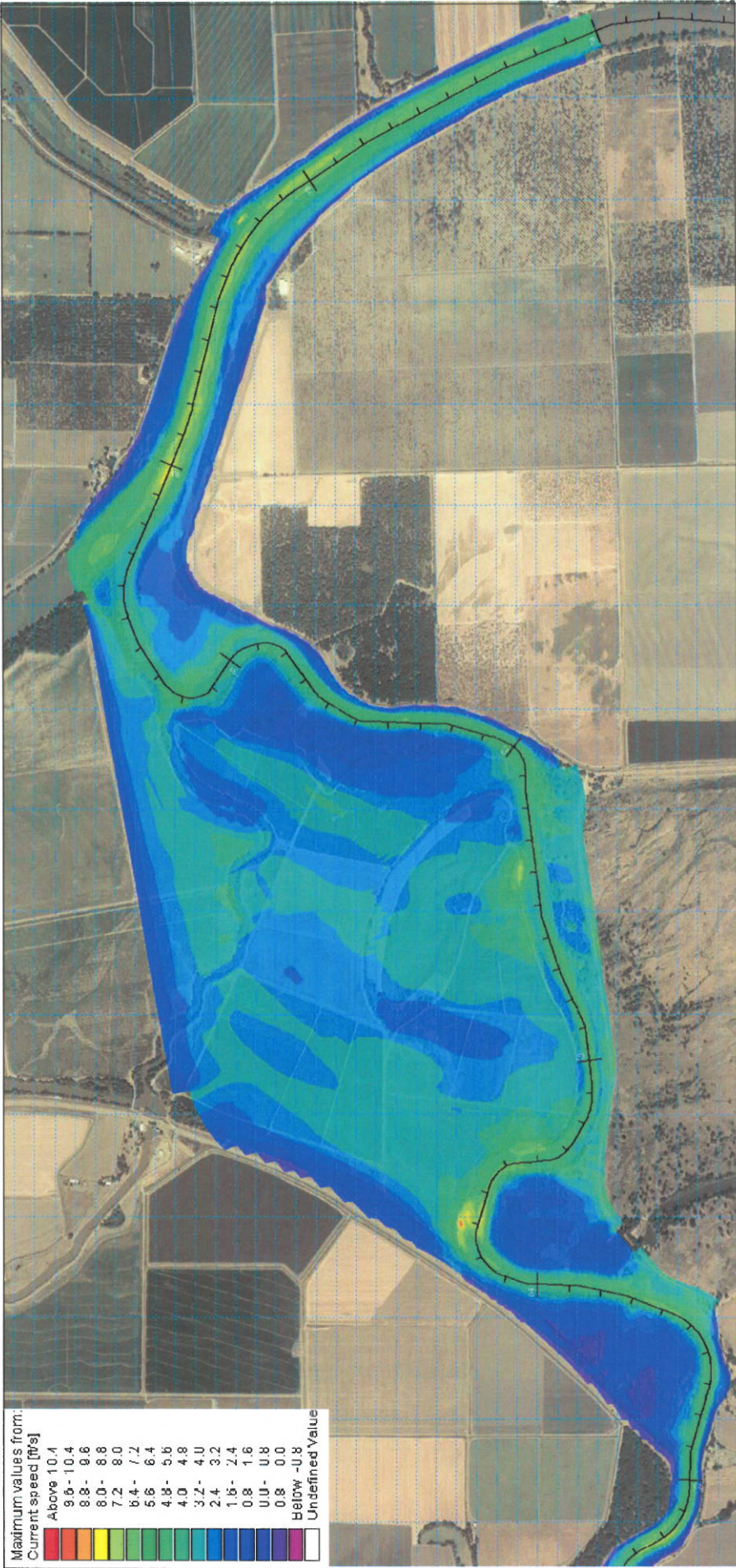
# Comp Study 100-year Relative Change in Maximum Velocities From Existing to Proposed Conditions Along Channel Bank

PWA Ref# 1868.01

P:\Projects\1868\01\_Fremont\_Landing\Reporting\Hydraulics\_Appendix\Figures\Figures\_LongProfile\_Planform\_v2.xlsx / CS100\_PH2\_AvgDiffV\_Bank







Notes:  
Source: MIKE 21C model outputs (PWA).

Figure 8  
Fremont Landing Conservation Bank

Comp Study 200-year Flood - Existing Conditions - Maximum Velocity

PWA Ref# 1868 01





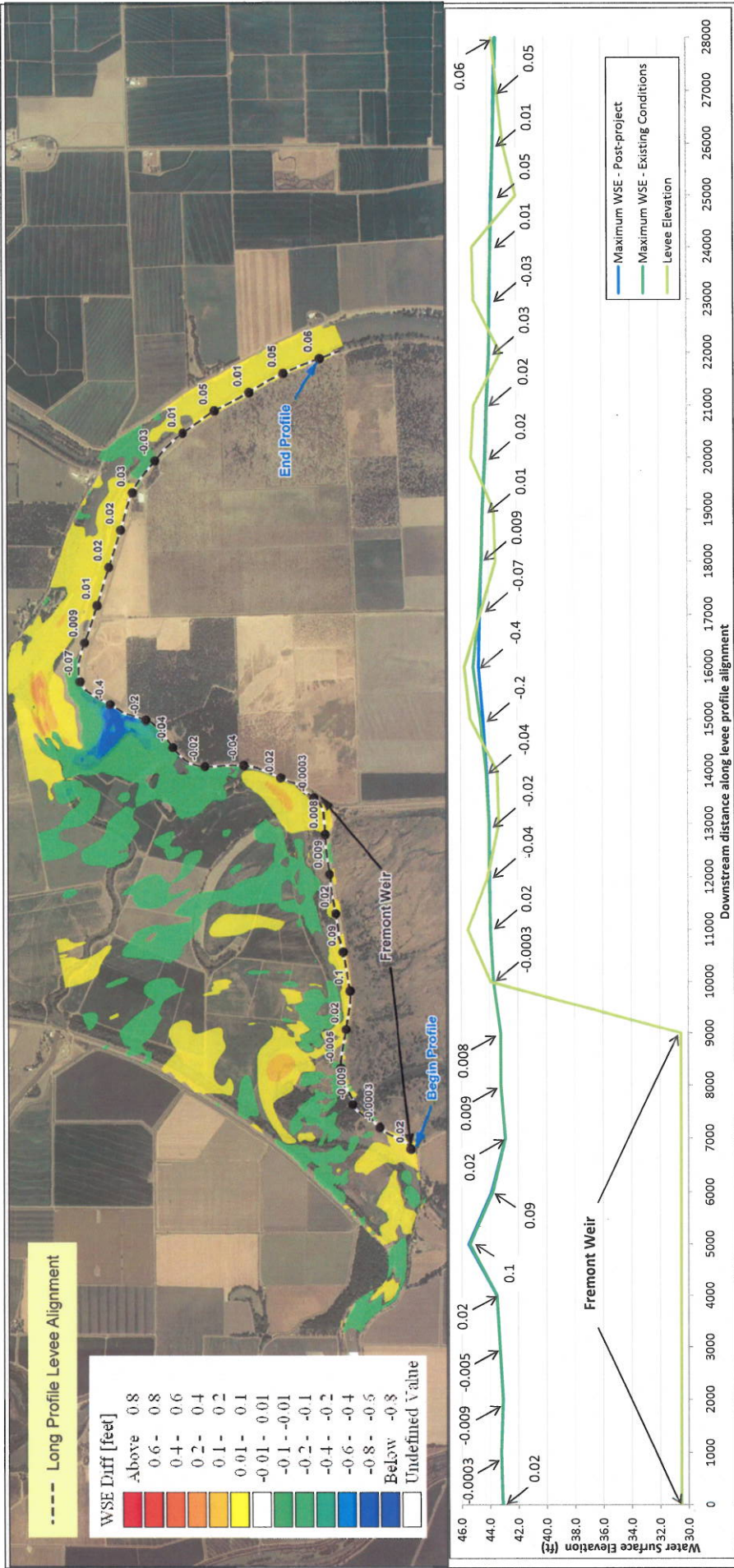


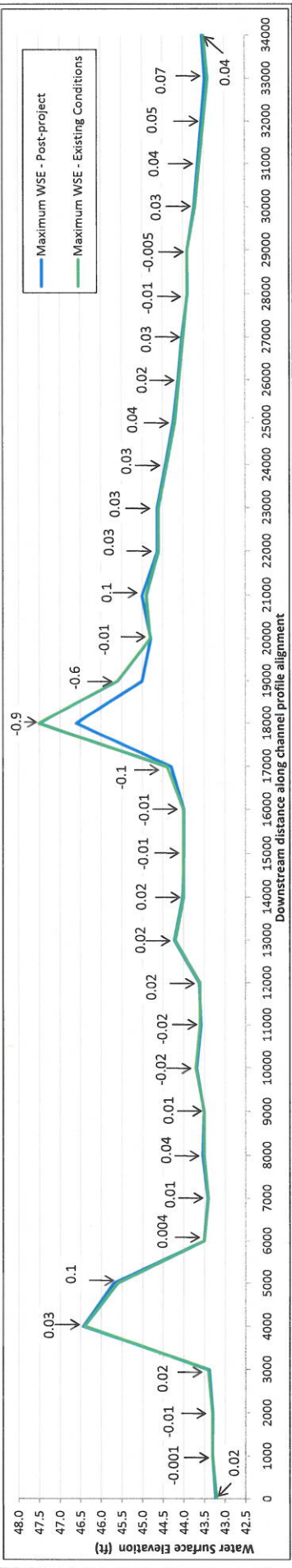
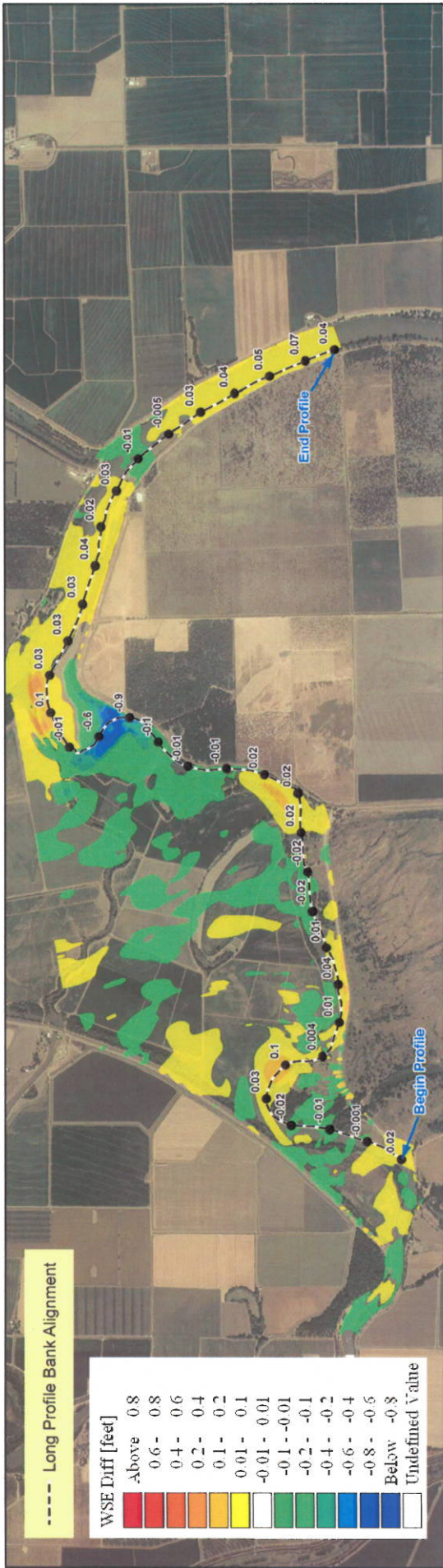
figure 9  
Fremont Landing Conservation Bank

Comp Study 200-year Relative Change in Maximum Water Surface Elevations From Existing to Proposed Conditions Along Project Levees

PWA Ref# 1868.01



Notes: Longitudinal profiles extracted from values influencing project levee  
Source: MIKE 21C model outputs (PWA).



Notes: Longitudinal profiles extracted from values along bank line of channel  
Source: MIKE 21C model outputs (PWA)

Figure 10  
Fremont Landing Conservation Bank

Comp Study 200-year Relative Change in Maximum Water Surface Elevations  
From Existing to Proposed Conditions Along Channel Bank

PWA Ref# 1868.01



